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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,802	02/10/2004	Yu-Ling Chang	24061.65	9688
42717	7590	09/16/2005	(TSMC2003-0230)	
HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			EXAMINER MASINICK, MICHAEL D	
			ART UNIT	PAPER NUMBER
			2125	

DATE MAILED: 09/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/775,802

Applicant(s)

CHANG ET AL.

Examiner

Michael D. Masinick

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 4-16, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 17, 18, and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims 4-16, 19, and 20 drawn to an invention nonelected without traverse in the response to non-final office action dated 8/11/2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Response to Arguments***

2. Applicant's arguments filed 8/11/2005 have been fully considered but they are not fully persuasive. Arguments and amendments related to USC 101, and USC 112 rejections are persuasive and those rejections are removed. USC rejections under USC 103 stand as previously written.

3. In response to applicant's argument that using the system of Harris and theory of congruency would not result in a reasonable expectation of success, and that there is no motivation to combine Harris with known mathematical proofs, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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4. Attempts by the applicant to paint Harris as only a station of three different tanks with different purposes is erroneous. The claims in Harris are directed to a system for moving workpieces between multiple identical tank stations with no assignment of function to the tanks. While it is true that one embodiment of the invention of Harris uses three distinct stations to process semiconductor wafers as noted by applicants, this is an unfair assessment and limitation of the invention of Harris.

5. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

6. Applicant claims that Harris does not show "identifying a tank ... into which a batch of semiconductor products is to be processed". Examiner fails to see how this feature is not shown in Harris as moving wafers to their production tanks is the entire point of the patent. This feature is therefore inherent as the destination of a wafer MUST be identified before arrival thereto.

7. Finally, applicant asserts that Harris does not recognize the problem of "inefficiencies resulting from the lack of utilization of all tanks". Harris does not have to specifically recognize this problem for one of ordinary skill in the art to find the combination of Harris with basic math to be obvious. In the simplest example given by the examiner in the first action on the merits, a two tank system where each batch alternates between tanks reads on the claims as written. Applicant's assertion that one of ordinary skill in the art, when faced with the problem of how to properly utilize two tanks, would not have suggested a simple alternation between the two tanks (founded in the Mathematical theory of congruency), is not persuasive.

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8. As further support for the rejection as previously set forth, examiner calls attention to EP 1205578 A1 to Amourette et al which notes in the abstract: The "...use of two tanks in an alternating fashion for the chemical treatment also considerably reduces downtime for cleaning operations." Thus, it is clear that the use of multiple tanks in a module system was performed prior to applicant's application for a patent and that the combination of Harris below is valid.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 17, 18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,439,824 to Harris et al.

3. Referring to claim 1, 17, and 21, Harris shows a method for using a controller to identify a tank from a variety of tanks in which a batch of products is to be processed (Column 5 specifically).

4. Harris does not specifically show that this tank is selecting by identifying the batch number, finding the remainder when the batch number is divided by the number of tanks, and using that number tank.

5. While this calculation is not described in Harris, the use of the modulus decision system is a well-known and inherent concept in many everyday tasks, though never described as such.

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The simplest explanation is when there are only two possible tanks. Then taking the remainder of the batch number divided by the number of tanks (2) will always yield either zero or one. So when batch numbers are processed sequentially (there is no reason to believe that they are not processed sequentially in the Harris patent), it is simply an alternating between tanks. While only slightly more complicated with more tanks, the modulus system as described in the specification and claimed is nothing more than a way of processing sequential batches of product in alternating processing chambers. A simple example with four tanks:

Batch #1 = processed in tank 1.

Batch #2 = processed in tank 2.

Batch #3 = processed in tank 3.

Batch #4 = processed in tank 4.

Batch #5 = processed in tank 1.

Batch #6 = processed in tank 2.

Batch #7 = processed in tank 3.

Batch #8 = processed in tank 4.

Batch #9 = processed in tank 1.

Batch #10 = processed in tank 2.

Batch #11 = processed in tank 3.

Batch #12 = processed in tank 4.

Batch #13 = processed in tank 1. etc....

It would have been obvious to one of ordinary skill at the time the invention was made to use the modulus division system as well known in the art as a way to decide the destination tank of Harris because of the known mathematical theory of congruency (See cited prior art on modular arithmetic for a detailed explanation) which explains that when any two numbers leave the same remainder when divided by another number, they are said to be congruent (or "equivelant") to each other in that specific application. In this case, batch numbers which are congruent would be processed in the same tank.

Referring to claim 2, the simple case of alternating tanks as shown above would always result in the same tank usage no matter what the batch number was or when the liquid was changed.

Referring to claim 3 and 18, Harris shows processing the incoming products in the tank identified.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Masinick whose telephone number is (571) 272-3746. The examiner can normally be reached on Mon-Fri, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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